



January 31, 2005

Garrett A. Stone, Esquire  
Brickfield, Burchette and Ritts, P.C.  
1025 Thomas Jefferson Street, NW  
8<sup>th</sup> Floor, West Tower  
Washington, D.C. 20007

Re: SCPSC Docket No. 2005-1-E

Dear Garrett:

Pursuant to the December 21, 1998 agreement entered into by and between Progress Energy Carolinas, Inc. and Nucor in Docket 1999-029-E, enclosed is documentation required by paragraph 1 of that agreement regarding PEC's actual system nuclear capacity factor calculation. As you can see, PEC met the 92.5% goal.

Sincerely,

A handwritten signature in black ink, appearing to read 'Len S. Anthony'.

Len S. Anthony  
Manager - Regulatory Affairs

LSA:mhm

Enclosure

cc: Charles Terreni (w/enc.)

221061

Report to  
NUCOR STEEL CORPORATION

Of

CP&L Nuclear System Capacity Factor

Pursuant to  
SCPSC Docket 1999-029-E

Test Period  
January 1, 2004  
Through  
December 31, 2004

## Table of Contents

I.	Unadjusted Annual Capacity Factor Calculation	page 1
II.	Capacity Factor Calculation Adjusted for refueling outages only	page 2
III.	Capacity Factor Calculation with Adjustments for all Reasonable Nuclear System Reductions	page 3
IV.	Attachment A Summary of monthly generation and capacity data as reported to the NRC	
V.	Attachment B Summary of generation losses for each unit and totaled for the system	

**CP&L Nuclear Capacity Factor Calculation  
(Unadjusted)  
January 1, 2004 - December 31, 2004**

2004 Annual Net Electrical Generation

Reported to the NRC

And available in the NRC's Public Documents Collection

Brunswick Unit 1	7,088,596
Brunswick Unit 2	7,756,756
Harris Unit 1	7,008,428
Robinson Unit 2	5,742,212
<b>(A) TOTAL</b>	<b>27,595,992</b>

2004 Unit Maximum Dependable Capacity

Reported to the NRC

And available in the NRC's Public Documents Collection

Brunswick Unit 1	872
Brunswick Unit 2	900
Harris Unit 1	900
Robinson Unit 2	710
<b>(B) TOTAL</b>	<b>3,382</b>

**(C) Hours in Year (Given) = 8,784**

**CAPACITY FACTOR FORMULA**

$$[A / (B \times C)]\% = 92.9\%$$

**CP&L Nuclear Capacity Factor Calculation  
Adjusted for Refueling Outages Only  
and Steam Generator Replacement Outages  
of 100 Days or Less  
January 1, 2004 - December 31, 2004**

2004 Annual Net Electrical Generation

Reported to the NRC

And available in the NRC's Public Documents Collection

Brunswick Unit 1	7,088,596
Brunswick Unit 2	7,756,756
Harris Unit 1	7,008,428
Robinson Unit 2	5,742,212
<b>TOTAL</b>	<b>27,595,992</b>

**Refueling outages of 40 days or less and  
Steam Generator Replacement outages of 100 days or less**

MWH LOSS

Brunswick Unit 1	725,446
Brunswick Unit 2	0
Robinson Unit 2	656,466
Harris Unit 1	703,440

<b>TOTAL</b>	<b>2,085,352</b>
--------------	------------------

(A) Net Generation + Adjustment 29,681,344

2004 Unit Maximum Dependable Capacity

Reported to the NRC

And available in the NRC's Public Documents Collection

Brunswick Unit 1	872
Brunswick Unit 2	900
Harris Unit 1	900
Robinson Unit 2	710
<b>TOTAL</b>	<b>3,382</b>

(B)

(C)

Hours in Year (Given) = 8,784

**CAPACITY FACTOR FORMULA**

$$[A / (B \times C)]\% = 99.9\%$$



Amended SC Fuel Rule  
Related to Nuclear Operations

There shall be a rebuttable presumption that an electrical utility made every reasonable effort to minimize cost associated with the operation of its nuclear generation system if the utility achieved a net capacity factor  $\geq 92.5\%$  during the 12 month period under review. For the test period January 1, 2004 through December 31, 2004, actual period to date performance is summarized below.

Period to Date: January 1, 2004 through December 31, 2004

Nuclear System Capacity Factor Calculation (Based on net generation)

- |    |  |                    |
|----|--|--------------------|
| A. | Nuclear system actual generation for SCPSC test period                       | A = 27,595,992 MWH |
| B. | Total number of hours during SCPSC test period                               | B = 8,784 Hrs.     |
| C. | Nuclear system MDC during SCPSC test period (see page 2)                     | C = 3,382 MW       |
| D. | Reasonable nuclear system reductions (see page 2)                            | D = 3,228,761 MWH  |
| E. | SC Fuel Case nuclear system capacity factor: $[(A+D) / (B*C)]*100 = 103.8\%$ |                    |

NOTE:

If Line Item E  $\geq 92.5\%$ , presumption of utility's minimum cost operation  
If Line Item E  $< 92.5\%$ , utility has burden of proof of reasonable operations

Amended SC Fuel Rule  
Nuclear System Capacity Factor Calculation  
Reasonable Nuclear System Reductions  
Period to Date: January 1, 2004 through December 31, 2004

Nuclear Unit Name and Designation	BNP Unit # <u>1</u>	BNP Unit # <u>2</u>	HNP Unit # <u>1</u>	RNP Unit # <u>2</u>	Nuclear System
Unit MDC	872 MW	900 MW	900 MW	710 MW	3,382 MW
Reasonable refueling outage time (MWH)	725,446	0	703,440	656,466	
Reasonable maintenance, repair, and equipment replacement outage time (MWH)	24,460	228,584	564,118	33,595	
Reasonable coast down power reductions (MWH)	4,405	0	0	1,431	
Reasonable power ascension reductions (MWH)	79,953	13,923	0	0	
Prudent NRC required testing outages (MWH)	50,776	29,826	546	352	
SCPSC identified outages not under utility control (MWH)	0	0	0	0	
Acts of Nature reductions (MWH)	111,441	0	0	0	
Reasonable nuclear reduction due to low system load (MWH)	0	0	0	0	
Unit total excluded MWH	996,480	272,333	1,268,105	691,844	
Total reasonable outage time exclusions (MWH) [carry to Page 1, Line D]					3,228,761

## **ATTACHMENT A**



## 2004 Recorded Generation and Capacity Factors

Monthly Generation						
Month	BNP 1	BNP 2	BNP	HNP	RNP	Carolina Fleet
January	646,088	670,811	1,316,899	696,104	558,604	2,571,607
February	523,673	648,282	1,171,955	651,056	523,102	2,346,113
March	(4,786)	682,203	677,417	691,524	556,761	1,925,702
April	549,989	652,518	1,202,507	640,461	335,268	2,178,236
May	708,842	614,039	1,322,881	378,332	33,302	1,734,515
June	668,438	624,341	1,292,779	655,523	520,894	2,469,196
July	684,403	612,757	1,297,160	674,118	535,932	2,507,210
August	565,854	611,796	1,177,650	676,491	539,049	2,393,190
September	682,348	648,485	1,330,833	658,386	528,171	2,517,390
October	687,273	678,183	1,365,456	324,248	510,844	2,200,548
November	688,328	644,184	1,332,512	268,635	538,888	2,140,035
December	688,146	669,157	1,357,303	693,550	561,397	2,612,250
<b>TOTAL</b>	<b>7,088,596</b>	<b>7,756,756</b>	<b>14,845,352</b>	<b>7,008,428</b>	<b>5,742,212</b>	<b>27,595,992</b>

Monthly Capacity Factor (Unadjusted)						
MDC	BNP 1	BNP 2	BNP	HNP	RNP	Carolina Fleet
	872	900	1,772	900	710	3,382
January	99.6%	100.2%	99.9%	104.0%	105.7%	102.2%
February	86.3%	103.5%	95.0%	103.9%	105.9%	99.7%
March	-0.7%	101.9%	51.4%	103.3%	105.4%	76.5%
April	87.7%	100.8%	94.4%	99.0%	65.7%	89.6%
May	109.3%	91.7%	100.3%	56.5%	6.3%	68.9%
June	106.5%	96.3%	101.3%	101.2%	101.9%	101.4%
July	105.5%	91.5%	98.4%	100.7%	101.5%	99.6%
August	87.2%	91.4%	89.3%	101.0%	102.0%	95.1%
September	108.7%	100.1%	104.3%	101.6%	103.3%	103.4%
October	105.8%	101.1%	103.4%	48.4%	96.6%	87.3%
November	109.6%	99.4%	104.4%	41.5%	105.4%	87.9%
December	106.1%	99.9%	103.0%	103.6%	106.3%	103.8%
<b>TOTAL</b>	<b>92.5%</b>	<b>98.1%</b>	<b>95.4%</b>	<b>88.7%</b>	<b>92.1%</b>	<b>92.9%</b>

Year to Date Generation (Unadjusted)						
	BNP 1	BNP 2	BNP	HNP	RNP	Carolina Fleet
January	646,088	670,811	1,316,899	696,104	558,604	2,571,607
February	1,169,761	1,319,093	2,488,854	1,347,160	1,081,706	4,917,720
March	1,164,975	2,001,296	3,166,271	2,038,684	1,638,467	6,843,422
April	1,714,964	2,653,814	4,368,778	2,679,145	1,973,735	9,021,658
May	2,423,806	3,267,853	5,691,659	3,057,477	2,007,037	10,756,173
June	3,092,244	3,892,194	6,984,438	3,713,000	2,527,931	13,225,369
July	3,776,647	4,504,951	8,281,598	4,387,118	3,063,863	15,732,579
August	4,342,501	5,116,747	9,459,248	5,063,609	3,602,912	18,125,769
September	5,024,849	5,765,232	10,790,081	5,721,995	4,131,083	20,643,159
October	5,712,122	6,443,415	12,155,537	6,046,243	4,641,927	22,843,707
November	6,400,450	7,087,599	13,488,049	6,314,878	5,180,815	24,983,742
December	7,088,596	7,756,756	14,845,352	7,008,428	5,742,212	27,595,992

Year to Date Capacity Factor (Unadjusted)						
	BNP 1	BNP 2	BNP	HNP	RNP	Carolina Fleet
January	99.6%	100.2%	99.9%	104.0%	105.7%	102.2%
February	93.2%	101.8%	97.5%	103.9%	105.8%	101.0%
March	61.2%	101.8%	81.8%	103.7%	105.7%	92.7%
April	67.7%	101.6%	84.9%	102.5%	95.8%	91.9%
May	76.2%	99.6%	88.1%	93.2%	77.5%	87.2%
June	81.2%	99.0%	90.3%	94.5%	81.5%	89.5%
July	84.7%	97.9%	91.4%	95.4%	84.4%	91.0%
August	85.1%	97.1%	91.2%	96.1%	86.7%	91.5%
September	87.6%	97.4%	92.6%	96.7%	88.5%	92.8%
October	89.5%	97.8%	93.7%	91.8%	89.3%	92.3%
November	91.3%	97.9%	94.7%	87.3%	90.8%	91.9%
December	92.5%	98.1%	95.4%	88.7%	92.1%	92.9%

## **ATTACHMENT B**

**BRUNSWICK Unit 1 Year 2004 MWH Losses by Cause**

	REFUEL	REPAIRs	COAST DOWN	POWER ASCEN	TESTING	SCPSC	ACTS of Nature	LOW LOAD	TOTAL
Janaury	0	3,521	0	0	0	0	0	0	3,521
February	41,856	0	3,485	0	0	0	0	0	45,341
March	648,768	0	0	0	0	0	0	0	648,768
April	34,822	0	0	79,953	872	0	0	0	115,646
May	0	0	0	0	0	0	0	0	0
June	0	893	0	0	10,898	0	0	0	11,791
July	0	439	0	0	14,823	0	0	0	15,261
August	0	16,832	0	0	0	0	99,129	0	115,961
September	0	0	0	0	0	0	0	0	0
October	0	1,441	236	0	3,627	0	12,312	0	17,615
November	0	0	0	0	0	0	0	0	0
December	0	1,335	684	0	20,556	0	0	0	22,576
TOTAL	725,446	24,460	4,405	79,953	50,776	0	111,441	0	996,480



**BRUNSWICK Unit 2 Year 2004 MWH Losses by Cause**

	REFUEL	REPAIRs	COAST DOWN	POWER ASCEN	TESTING	SCPSC	ACTS of Nature	LOW LOAD	TOTAL
Janaury	0	5,454	0	0	10,163	0	0	0	15,617
February	0	0	0	0	0	0	0	0	0
March	0	7,718	0	0	0	0	0	0	7,718
April	0	2,149	0	0	7,869	0	0	0	10,018
May	0	61,465	0	5,214	0	0	0	0	66,678
June	0	12,425	0	8,709	3,343	0	0	0	24,476
July	0	61,264	0	0	0	0	0	0	61,264
August	0	62,129	0	0	0	0	0	0	62,129
September	0	1,708	0	0	0	0	0	0	1,708
October	0	1,591	0	0		0	0	0	1,591
November	0	11,573	0	0	4,440	0	0	0	16,013
December	0	1,109	0	0	4,012	0	0	0	5,121
TOTAL	0	228,584	0	13,923	29,826	0	0	0	272,333

**Harris Unit 1 Year 2004 MWH Losses by Cause**

	REFUEL	REPAIRs	COAST DOWN	POWER ASCEN	TESTING	SCPSC	ACTS of Nature	LOW LOAD	TOTAL
Janaury	0	0	0	0	0	0	0	0	0
February	0	0	0	0	0	0	0	0	0
March	0	31	0	0	50	0	0	0	81
April	0	21,537	0	0	0	0	0	0	21,537
May	0	542,551	0	0	0	0	0	0	542,551
June	0	0	0	0	0	0	0	0	0
July	0	0	0	0	0	0	0	0	0
August	0	0	0	0	318	0	0	0	318
September	0	0	0	0	0	0	0	0	0
October	346,590	0	0	0	178	0	0	0	346,768
November	356,850	0	0	0	0	0	0	0	356,850
December	0	0	0	0	0	0	0	0	0
TOTAL	703,440	564,118	0	0	546	0	0	0	1,268,105



Robinson Year 2004 MWH Losses by Cause

	REFUEL	REPAIRs	COAST DOWN	POWER ASCEN	TESTING	SCPSC	ACTS of Nature	LOW LOAD	TOTAL
Janaury	0	0	0	0	0	0	0	0	0
February	0	0	0	0	0	0	0	0	0
March	0	0	0	0	0	0	0	0	0
April	187,440	0	1,431	0	352	0	0	0	189,223
May	469,026	0	0	0	0	0	0	0	469,026
June	0	0	0	0	0	0	0	0	0
July	0	0	0	0	0	0	0	0	0
August	0	0	0	0	0	0	0	0	0
September	0	0	0	0	0	0	0	0	0
October	0	33,595	0	0	0	0	0	0	33,595
November	0	0	0	0	0	0	0	0	0
December	0	0	0	0	0	0	0	0	0
TOTAL	656,466	33,595	1,431	0	352	0	0	0	691,844

SYSTEM TOTAL 2004 MWH LOSSES BY CAUSE

	REFUEL	REPAIRs	COAST DOWN	POWER ASCEN	TESTING	SCPSC	ACTS of Nature	LOW LOAD	TOTAL
Janaury	0	8,975	0	0	10,163	0	0	0	19,138
February	41,856	0	3,485	0	0	0	0	0	45,341
March	648,768	7,748	0	0	50	0	0	0	656,567
April	222,262	23,686	1,431	79,953	9,093	0	0	0	336,424
May	469,026	604,015	0	5,214	0	0	0	0	1,078,255
June	0	13,317	0	8,709	14,241	0	0	0	36,268
July	0	61,702	0	0	14,823	0	0	0	76,525
August	0	78,961	0	0	318	0	99,129	0	178,407
September	0	1,708	0	0	0	0	0	0	1,708
October	346,590	36,627	236	0	3,805	0	12,312	0	399,570
November	356,850	11,573	0	0	4,440	0	0	0	372,863
December	0	2,444	684	0	24,568	0	0	0	27,697
									0
TOTAL	2,085,352	850,758	5,835	93,876	81,500	0	111,441	0	3,228,761